Small Business Innovation Research/Small Business Tech Transfer

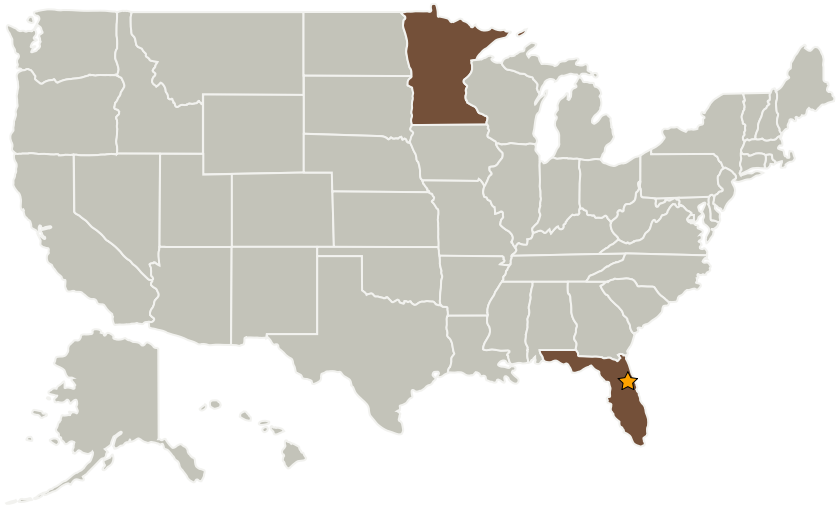
Wireless Magnetic Sensor with Orthogonal Frequency Coding, Phase I

Completed Technology Project (2006 - 2007)

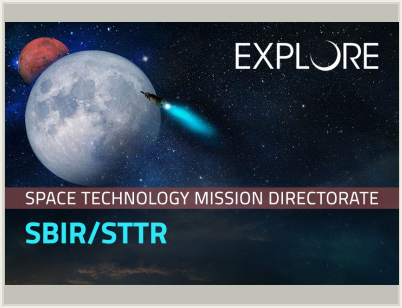
Project Introduction

The goal of this SBIR Phase I research project is to develop batteryless, wireless magnetic sensors with orthogonal frequency coding (OFC). These sensors will be based on surface acoustic wave (SAW) technology already in common use in microwave filters and signal processing elements for communications devices. We will develop new magnetostrictive structures to be combined on-chip with SAW devices to create innovative magnetic field sensors that can be individually interrogated from a distance with a microwave reader. Combining the magnetostrictive materials with OFC SAW transponders will provide new sensor capabilities that are compatible with the orthogonal frequency coding scheme recently demonstrated under NASA funding. The novel magnetic field sensors will be individually coded, inexpensive to manufacture, and require no on-board power?making them ideal for distributed and embedded monitoring technologies, for both government and commercial use.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Kennedy Space Center(KSC)	Lead Organization	NASA Center	Kennedy Space Center, Florida
NVE Corporation	Supporting Organization	Industry	Eden Prairie, Minnesota



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Kennedy Space Center (KSC)

Responsible Program:

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Primary U.S. Work Locations	
Florida	Minnesota

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX13 Ground, Test, and Surface Systems
  - TX13.2 Test and Qualification
    - TX13.2.7 Test Instruments and Sensors